



METRO
WATER
RECOVERY

RESILIENT

BY DESIGN

2022
ANNUAL
REPORT

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RESILIENT BY DESIGN

Resilient by Design refers not only to the water recovery infrastructure Metro builds and operates, but also to its employees. To keep its commitment to protecting public health and the environment, Metro empowers its people to accomplish the mission today, as well as plan and prepare for an uncertain future.

Highlights from 2022 reflect this design, including the positive impacts of Metro's regional partnerships, planning, smart investments, and financial stewardship with a long-term view – all of which provide a foundation to ensure its ability to meet challenges for years to come. These accomplishments demonstrate the exceptional value Metro provides while keeping costs to residential users well below the national average.

Metro's accomplishments and awards in 2022 are a result of this commitment to resilience and the foresight of the design. On behalf of the employees and Board, Metro is honored to serve its communities today and ensure a healthy region far into the future.

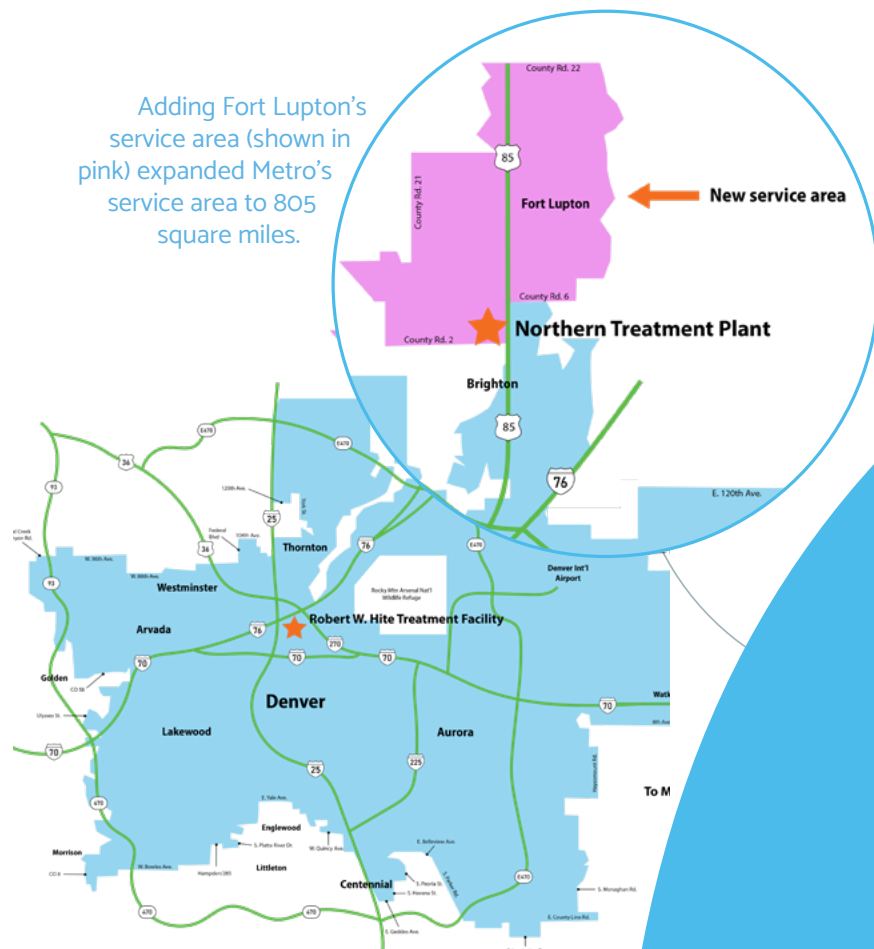
ANDREW JOHNSTON
Board Chair

WILLIAM J. "MICKEY" CONWAY
Chief Executive Officer (CEO)

METRO WELCOMES FORT LUPTON

The City of Fort Lupton officially joined Metro as a Member Municipality in June, expanding the service area and Board of Directors. Fort Lupton is Metro's first new Member Municipality since the City of Brighton and South Adams County Water and Sanitation District joined in July 2009.

Fort Lupton's leaders recognized the effectiveness of collaborating with Metro's Connectors and employees to protect the environment and meet community needs. Fort Lupton is planning to construct an eight-mile pipeline by 2025 that will connect to the South Platte Interceptor, which connects to the Northern Treatment Plant (NTP).



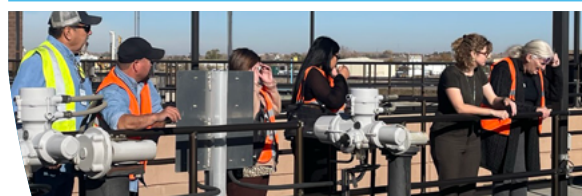
“Positioning Fort Lupton for the future, our inclusion with Metro is a positive move for our citizens and businesses.”

Zo Hubbard
Fort Lupton Mayor

Click or scan to read more on the *Currents* blog.



Fort Lupton leaders tour the NTP.



BOARD OF DIRECTORS

Fort Lupton brought the number of Metro's municipal connectors to 61 and the Directors on the Board to 40. Together, these cities, towns, and special districts protect the South Platte watershed by providing cost-effective clean water services to 2.2 million people who live and work in the service area.

Curt Aldstadt, Westminster
Peter Baertlein, Denver
Greg Baker, Aurora
Philip Burgi, Wheat Ridge
Nadine Caldwell, Aurora
John Chavez, Berkeley
David Councilman, Pleasant View
Deborah Crisp, East Lakewood
Clark Davenport, Northwest Lakewood
James DeHerrera, Aurora**
John Dingess, Aurora*
Robert Duncanson, Denver
Marv Falconburg, Brighton*
Mary Gearhart, Denver**
Jo Ann Giddings, Aurora
Joan Iler, Westridge
Kathryn Jensen, North Table Mountain*
Andrew Johnston, Denver
Janet Kieler, Denver
Craig Kocian, Arvada
Laura Kroeger, Lakewood
Kathy Laurienti, Crestview
Doug Lazure, Denver

Bob LeGare, Aurora
Charles Long, Thornton
Martin Majors, Fruitdale
Charlie Miller, Fort Lupton**
Jamie Miller, North Table Mountain
Sarah Niyork, South Adams County
Steve Pott, Applewood
Bill Ray, Arvada
Robert Roth, Aurora
Michael Sapp, Denver*
Kim Schoen, Brighton**
Greg Sekera, Lakewood
Delbert Smith, Bancroft-Clover
Peter Spanberger, Denver
Mary Beth Susman, Denver
Amerigo Svaldi, North Washington Street
Dennis Towndrow, North Pecos
Scott Twombly, Thornton
Jennifer Williams, Denver
Ronald Younger, Denver

*Retired during 2022
**Joined in 2022



Board Officers Delbert Smith, Andrew Johnston, Sarah Niyork, and Jo Ann Giddings (left to right).

NTP GROWTH AND DEDICATION

Six years after startup, the NTP hit its awkward adolescent phase, according to Kim Cowan, NTP Director of Operations and Maintenance. Loading grew almost to capacity for some equipment but not enough yet to put additional units online. Parts and equipment are aging and keeping the maintenance team busy.

The NTP's 21-person team jelled in 2022, the first full year with a full team of supervisors. Employee engagement is key to the plant's resilience and award-winning operations, per Kim. Everyone wears whatever hat they can and goes the extra step to address hiring challenges, equipment breaking, and supply chain delays.



NTP untreated influent (left) compared to treated effluent (right) in May.

2022 RESOURCES RECOVERED



1.8B gallons
CLEANED EFFLUENT



104K pounds
NITROGEN



1K tons
CLASS B BIOSOLIDS

RWHTF STEWARDSHIP AND TEAMWORK

In its 56th year of operation, the Robert W. Hite Treatment Facility (RWHTF) experienced its 23rd year of continuous construction, with 23 large projects from the influent channel and headworks to solids processes to disinfection. As the work base for 400+ employees, the plant is always busy, with new challenges and opportunities every day, according to Martin Alvis, RWHTF Director of Operations.

An 18-year veteran, Martin credits Metro's people for the RWHTF's longevity and operational excellence. A multiyear collaboration among the Engineering, Maintenance, and Operations departments demonstrated the power of teamwork. Parts and procedures were in place for an unprecedented and critical bypass pumping project to realign conduits in the North Plant influent channel.

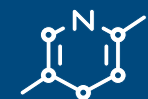


RWHTF influent channels.

2022 RESOURCES RECOVERED



44B gallons
CLEANED EFFLUENT



2M pounds
NITROGEN



2M pounds
PHOSPHORUS



4M kilowatts
GENERATED HEAT AND POWER



10M tons
CLASS B BIOSOLIDS



METROGRO FARM REUSE AND REBUILDS

The METROGRO Farm spent its 29th year of dryland farming operations surviving the spring drought that covered the western United States. Drought, winds, and sawflies tamped down summer crops compared to previous harvests.

Metro's Resource Recovery and Reuse (RR&R) operators land-applied Class B biosolids to:

- 36** Permitted application sites on the METROGRO Farm
- 58** Private farm sites

This application keeps the soil prepared for when weather turns wetter, according to Jason Zimelman, METROGRO Farm Administrator.

METROGRO FARM HARVESTS	CLASS B BIOSOLIDS REUSED
BUSHELS PER ACRE	DRY TONS
	
10 SUMMER WHEAT	21K PRIVATE FARMS AND COMPOSTER
20 FALL MILO	7K METROGRO FARM

TERRAGATOR REBUILD

The Fleet Maintenance Division rebuilt their fourth TerraGator, after this biosolids applicator was discontinued a few years ago with no substitute. These four rebuilds have saved an estimated \$1.6 million, according to Rob White, Fleet Maintenance Manager.



Pat Moncrief, Equipment and Transportation Technician II, rebuilding a TerraGator.

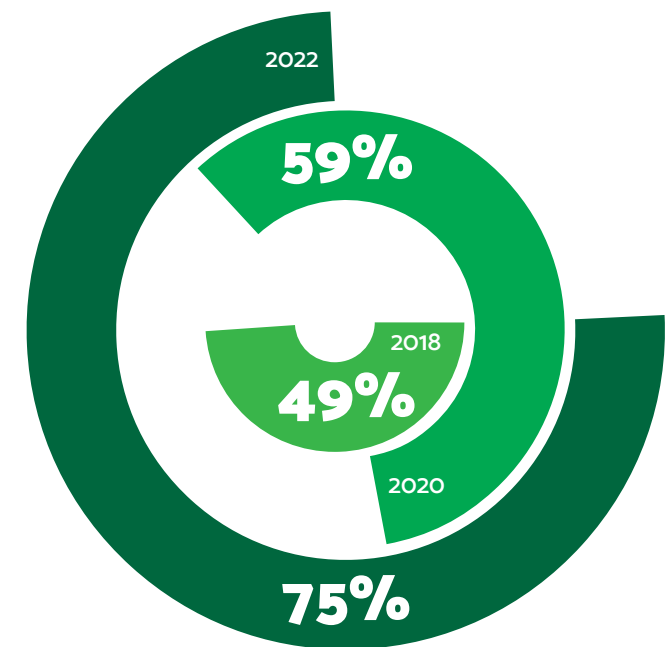
CYBERSECURITY PROGRAM GUARDING ASSETS

The Cybersecurity Program Management and Operations teams extended a huge thank you to employees for making the organization more secure from cyberattack.

Metro's Cybersecurity Program has reduced risk over the last four years by initiating and formalizing activities from the National Institute of Standards and Technology (NIST) cybersecurity framework and by networking with federal and regional agencies.

Metro conducted a third self-assessment in July to compare its cybersecurity practices with the NIST framework. Employees engage in training and respond promptly and effectively to Cybersecurity Program guidance.

-  **108** NIST FRAMEWORK ACTIVITIES
-  **81** ACTIVITIES UNDERWAY
-  **16** ACTIVITIES RELY ON ALL EMPLOYEES



NIST FRAMEWORK ACTIVITIES UNDERWAY

Metro is doing 75 percent of the NIST framework, which outlines best practices to identify, protect from, detect, respond to, and recover from cyberattacks and risks.

INSTRUMENTATION SOLUTIONS

Metro is a sector leader in using instrumentation to monitor and enhance processes at the RWHTF. Operators, engineers, and scientists at both plants are saving costs and ensuring Metro's treated wastewater meets permit limits by integrating instrument readings into daily decisions.

One improvement made in 2022 was to upgrade the dissolved oxygen instrumentation in the RWHTF South Secondary aeration basins and implement a new maintenance and validation procedure. These changes can decrease air usage by 30 percent, which is notable since aeration accounts for approximately 40 percent of the RWHTF electricity budget.



Cassie Caley, In-Line Instrument Specialist II, checking an instrument panel in the RWHTF South Plant.



Matt Maino, In-Line Instrument Specialist I, inspecting an ammonia probe in the RWHTF South Plant.

27 Instrument types

239 Instruments

305 Process points measured

10K Verification samples per year

6.9B Data points recorded every year, with a reading every second

DATA SHARING AND REPORTING

Data quality was a priority of the Technology and Innovation Department for the year. This team developed procedures to ensure accuracy, consistency, and transparency of Metro's data and data usage. They also used Alteryx, Power BI, and Pi Vision to create reports and dashboards to share data with other employees, including plant operators.

The team developed automated reports for the Biosolids Annual Report and an automated Discharge Monitoring Report generator. Automating these reports saves time for Metro's employees and makes calculations more transparent.



Anglers in the South Platte River by the RWHTF outfalls. Metro's treatment facilities are required to gather and share data about their effluent water quality, which must meet strict limits for many chemicals and compounds.

PFAS MONITORING AND OUTREACH

Per- and polyfluoroalkyl substances (PFAS) have been found in water everywhere on the planet. That means these “forever chemicals” are flowing down drains and traveling untreated through Metro’s facilities, as technologies are not yet available to remove PFAS from wastewater treatment processes at the scale of Metro’s operations.

Metro began monitoring the RWHTF effluent for PFAS in January and spent the year preparing to conduct a PFAS source identification study in 2023. Employees educated many people about PFAS in the water cycle and how they can help.

- Metro supported the passage of HB22-1345; and Jennifer Robinett, Environmental Services Director, spoke alongside other partners in a media event at the State Capitol in March 2022.
- She and other employees met later in the year with staff in both U.S. Senators’ offices to answer their questions.
- Metro presented PFAS information to Connectors and employees and published three blogs, a fact sheet, and a guide for consumers on its website.



Jennifer Robinett, Environmental Services Director, speaking to the media at the Capitol.



Click or scan to learn more about PFAS on Metro’s website.

WATER QUALITY REPORT

TWO LAKES AND A RIVER IMPROVED

Metro routinely sends water quality scientists and other volunteers into the South Platte River, Barr Lake, and Milton Reservoir to make sure its treatment technology and improvements in the waterways are working.

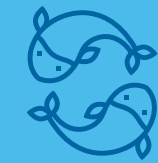
Metro’s water quality scientists published the 10th annual Water Quality Report to share data and analysis from Metro’s extensive monitoring. Available on Metro’s website, the report and a summary infographic indicate that treatment upgrades and river and lake enhancements are improving water quality as intended.



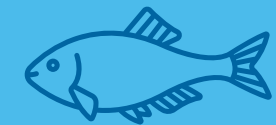
Fish survey teams in the South Platte River in October.



RIVER SURVEY RESULTS



7,971
FISH COUNTED



10
NATIVE SPECIES



8
NON-NATIVE SPECIES

FINANCIAL STABILITY

HISTORIC ADJUSTMENTS

Metro ended the year with strong financials, even though historic inflation burned through the 2022 operating budget before year-end. Low unemployment rates increased job turnover and vacancies. Steep price increases in chemicals, utilities, and materials and fuels resulted in two budget amendments to meet operating costs.

Metro's net ending position for 2022 increased by \$30 million, or approximately 3 percent higher than in 2021. Sewer Connection Charges for new taps into Metro's system held at 2021 levels plus adding tap fees from new Connector Fort Lupton.



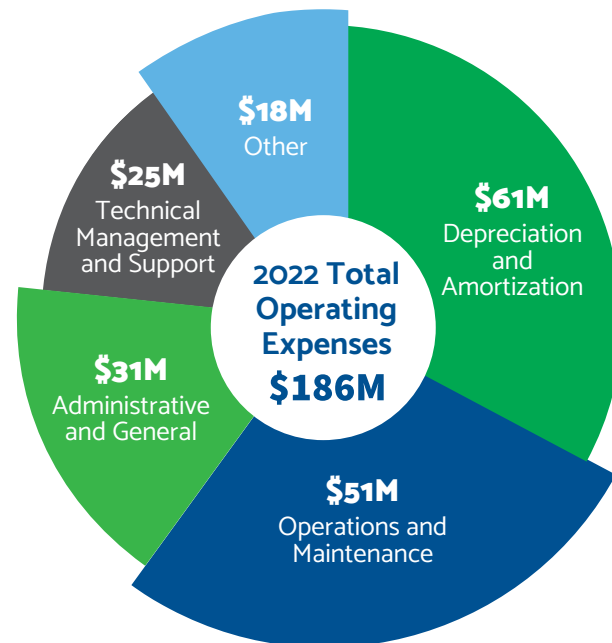
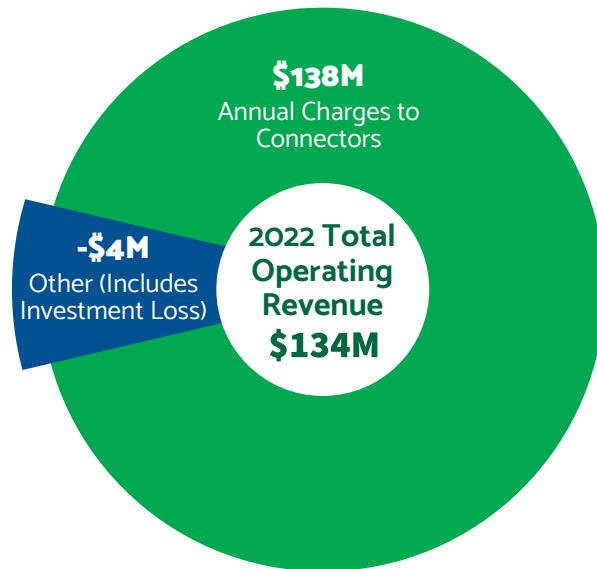
Click or scan to read Metro's Annual Comprehensive Financial Report.

NEW BUDGET AMENDMENT

Metro amended its operational budget for the first time to meet the financial demands of the year. Amending operating budgets is a standard practice for organizations the size of Metro, according to Molly Kostelecky, Chief Financial Officer. This new process enhances internal controls used to respond to changes during the year.

\$1B
2022 I Ending Net Position

\$82M
Sewer Connection Charges



CAPITAL ASSETS AND CONSTRUCTION

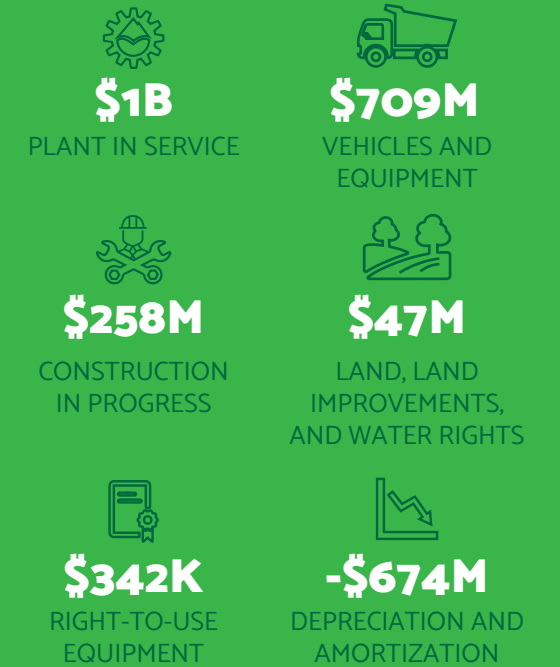
Metro's net capital assets increased by \$52 million and include treatment plants, pipelines, buildings, vehicles, machinery, and equipment. Metro did a good job of getting capital in place and making progress, according to Molly Kostelecky, with the largest project moving along in line with projections. Three of the four largest construction projects listed below are building infrastructure in our Connector communities.

With inflation reaching a 40-year high, employees adjusted the Ten-Year Capital Expenditure Schedule to accommodate rising cost estimates. Metro plans to spend more than \$960 million on capital assets through 2033, with a potential bond issue in 2024. Metro's long-term debt at year-end was \$610 million, and its credit ratings are excellent – Standard & Poor's AAA and Moody's Aa1.



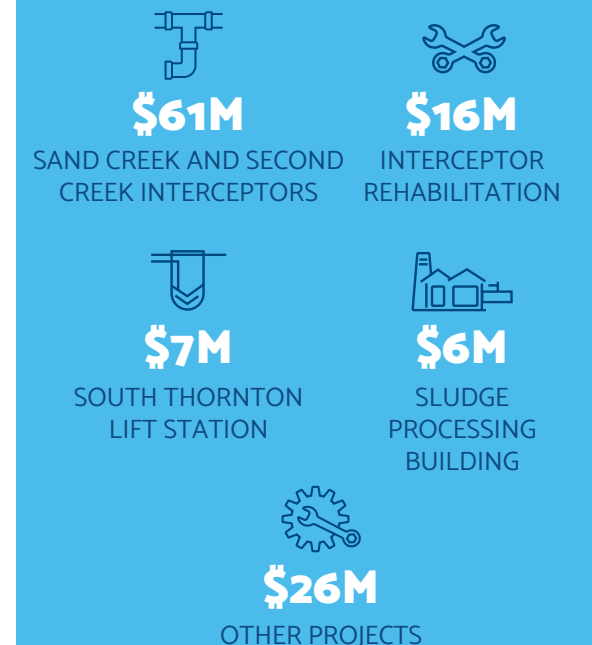
Metro project team at the new South Thornton Lift Station Groundbreaking.

CAPITAL ASSETS



\$1.34B Total Net Capital Assets
\$52M Increase in Net Capital Assets

CAPITAL EXPENDITURES



RWHTF North Plant clarifier and aeration basins.



INDUSTRIAL PARTNERS AND AWARD WINNERS

Partnering with industries that discharge into Metro's system through the Industrial Pretreatment Program protects its infrastructure, which is designed to treat domestic wastewater only. Every spring, Metro honors companies that met all their program requirements the prior year. Eighteen businesses were honored in 2022 for their 2021 performance.

PLATINUM AWARDS

Gold Award recipient five years in a row

CW Elaborations, Inc.
Crestview

Fathom Manufacturing
North Table Mountain

Packaging Corporation of America
Denver

Pepsi Beverages Company
Denver

United States Mint
Denver

GOLD AWARDS

100 percent compliance all year

Acme Manufacturing Company, Inc.
Denver

Advanced Circuits, Inc.
Aurora

Advanced Surface Technologies, Inc.
Arvada

Airvac Services, Inc.
North Washington

Ball Metal Beverage Container Corp.
North Pecos

Industrialex Manufacturing Corp.
Arvada

Lowry Landfill Superfund Site
Aurora

Niagara Bottling, LLC
Aurora

Swire Coca-Cola, USA
Denver

Union Pacific Railroad Denver North Yard
Denver

Upsher-Smith Laboratories, LLC
Denver

Wanco, Inc.
Arvada

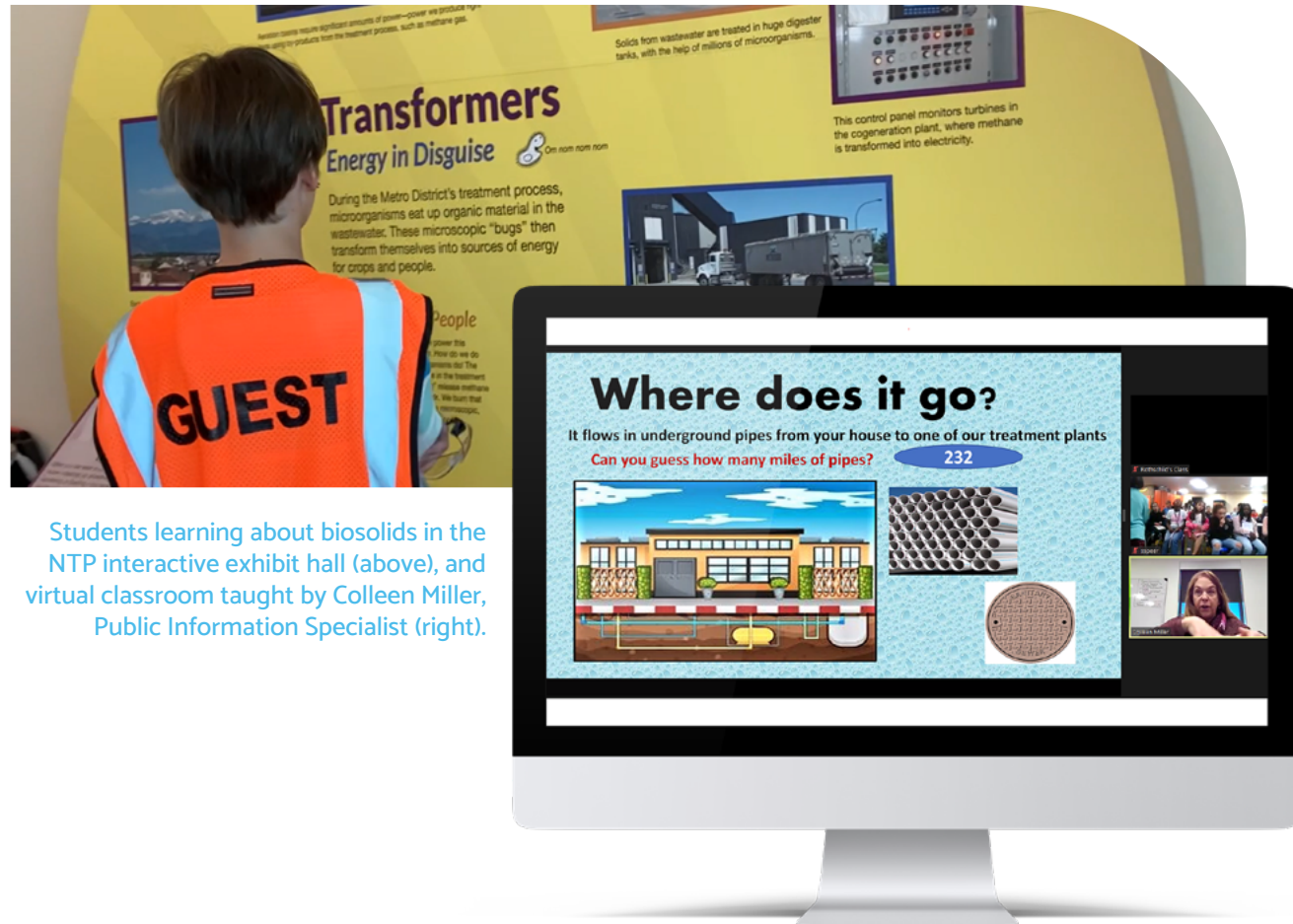
Wright & McGill
Denver

COMMUNITY OUTREACH AND EDUCATION

Metro expanded its outreach and educational opportunities with three significant additions.

- 1** Molly Kostelecky, Chief Financial Officer, hosted two webinars to explain annual charges to Connectors.
- 2** Employees hosted two open houses at the RWHTF in June and August for people virtually and in person.
- 3** The Public Information team hosted 20 sessions of a new 30-minute virtual classroom and educated approximately 500 third- to fifth-graders about the wastewater treatment process.

Metro resumed its full-day, in-person Wastewater and Aquatic Biology class, which is free for teachers. Employees hosted 30 facility tours, including several student groups and visitors such as U.S. Department of Energy employees and the regional One Water committee.



Students learning about biosolids in the NTP interactive exhibit hall (above), and virtual classroom taught by Colleen Miller, Public Information Specialist (right).

DIGITAL PRESENCE AND ENGAGEMENT

Metro's first full year of a new and improved digital presence reached thousands of people through website and social media posts. The new website received roughly double the visits of the previous site. How We Transform Wastewater, a new interactive page, received the Environmental Achievement Award for Public Information and Education from the National Association of Clean Water Agencies (NACWA).

Hundreds of viewers left dozens of comments throughout the year on both Facebook and LinkedIn posts. The most popular content, by far, featured Metro's dedicated employees and their innovative work.

METRO WATER RECOVERY™






How We Transform Wastewater

Click on an icon to learn more about that treatment process.

After water goes down a sink, toilet or drain in the Denver Metro, it reaches our sewer system and regulatory compliant operations.





2022 DIGITAL REACH

 21K WEBSITE UNIQUE VISITORS	 5K HOW WE TRANSFORM WASTEWATER VISITS	 4K CURRENTS BLOG VISITS
 1K LINKEDIN FOLLOWERS	 760 FACEBOOK FOLLOWERS	



Click or scan to visit Transforming Wastewater interactive web page.

- Learn more @ [MetroWaterRecovery.com](https://www.metrowaterrecovery.com)
-  [Facebook.com/MetroWaterRecovery](https://www.facebook.com/MetroWaterRecovery)
-  [Linkedin.com/company/metro-water-recovery](https://www.linkedin.com/company/metro-water-recovery)

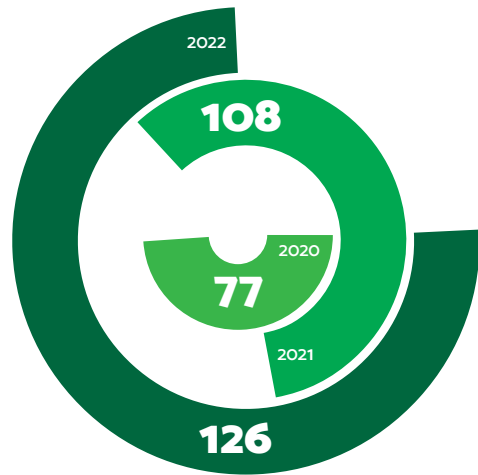


GREAT PLACE TO WORK

Metro filled 126 job positions, the most in a single year. People chose to join Metro in 2022 because they were seeking job security in an uncertain economy, according to Patricia Lopez, Senior Human Resources Manager. Candidates interviewed also expressed an interest in Metro's science-based job positions and doing meaningful work.

Employees stay because of the variety of interesting projects and the bond among our people. Fifty-one employees were recognized for reaching five-year service increments, including three with 35 years of service.

JOB POSITIONS FILLED, INCLUDING PROMOTIONS AND TRANSFERS



35 YEARS OF SERVICE

Ron Motooka, Electrical and Instrumentation Technician; Rob White, Fleet Maintenance Manager; and Jim Hudak, Fleet Maintenance Supervisor, were recognized for 35 years of service (left to right).



GREAT PLACE TO COMMUNICATE

Employee engagement is a high priority, and Metro provided many ways throughout the year for employees to share their work and ideas with one another. In late January, Organization Communications team members launched an online news site and weekly email digest. This team launched a new in-person and virtual series called METRO Talks, featuring employees. They also met with all workgroups to find out their communication ideas and needs.

From March to May, Mickey Conway visited with small groups of employees during the Listening Tour he undertakes every two years. Two town halls, in the spring and fall, were attended by hundreds of employees and several Board Directors.



Mickey Conway, CEO, taking a selfie at the Fall Town Hall in the Fleet Maintenance bays.

2022 EMPLOYEE REACH

6K
NEWS SITE HOME PAGE VISITS

276
NEWS SITE HOME PAGE UNIQUE VISITORS

359
NEWS POSTS

67
EMPLOYEE NEWS CONTRIBUTORS

183
LISTENING TOUR EMPLOYEE ATTENDEES

24
ORGANIZATION COMMUNICATIONS WORKGROUP VISITS

STRATEGIC PLAN UPDATE INPUT

With 56 of 60 tactics from the 2016 Strategic Plan complete or underway, Metro engaged employees, Directors, and others to update the plan. A special committee of Board Directors and employees led the strategic planning efforts and offered surveys, workshops, focus groups, and other ways to get input.

These stakeholders recommended Metro continue to focus on employees, outreach, and innovation. Employees and directors teamed up at the Board's fall workshop to refine strategic concepts. The update is expected to be completed in mid-2023.



Board Directors work with employees on Strategic Plan concepts at a fall workshop at the NTP.



208
JANUARY SURVEY RESPONDENTS



117
OCTOBER SURVEY RESPONDENTS



126
EMPLOYEES IN 11 FOCUS GROUPS



AWARDS AND HONORS

Healthy Workforce Designation Award
Cigna

Peak Performance Silver Award for NTP 2021
NACWA

Certified Healthy Workplace Leader
Colorado Health Links

Peak Performance Gold Award for RWHTF 2021
NACWA

Certificate of Excellence in Financial Reporting, 35th consecutive year
Government Finance Officers Association of the United States and Canada

Dan Freedman, Senior Wastewater Process Engineering Manager Volunteer Excellence Award
Rocky Mountain Water Environment Association (RMWEA)

Environmental Achievement Award for Watershed Collaboration
NACWA

Brandon Tymkovich, Equipment and Transportation Technician II Chair Award
Metro Board Chair

Environmental Achievement Award for Public Information and Education
NACWA

Elevated Ops Operations Challenge Division I Champions
Water Environment Federation

Excellence in Management Award - Silver
NACWA



Elevated Ops and other employees at Operations Challenge award ceremony.

Dan Freedman (left) receiving Volunteer Excellence Award.



Mickey Conway, CEO; Sherman Papke, Chief Technical Officer; Emily Jackson, General Counsel; and Dawn Ambrosio, Strategy and Communication Director, with NACWA award.



Brandon Tymkovich (center) with Pat Stanley, RR&R Director (left) and Andrew Johnston, Board Chair (right).



**METRO
WATER
RECOVERY**

We get your water.

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